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2. Many geometers believe it to be a sound geometrical statement but regard it as needing proof.

3. The Non-Euclideans do not view it either as axiomatic or as demonstrable. They deserve no credit for taking this ground, since they can find no foothold except by doubting or denying that it is either self evident or capable of being proved. Their position, however, is plainly that of geometrical *agnosticism*. To call it geometrical *science* would be a misnomer.

Finally, let us go deeper and ask the question—Is the parallel-axiom considered as a geometrical statement true or false?

The Euclideans respond that it is a true geometrical statement. But if true the statement that contradicts it must be false. Two propositions that mutually contradict each other can not both of them be true while the laws of non-contradiction and excluded-middle stand unrepealed among the statutes of logic.

The Non-Euclideans answer that they do not know whether the twelfth axiom of Euclid considered as a geometrical statement is true or false.

The geometer who refuses to confess with proud humility that he is in the same exalted condition of learned ignorance respecting geometrical fact must submit to being classed with that large majority who know some things and, also, know that they know them. The Non-Euclidians must not become discouraged, however, if they find the school houses full of geometers incorrigibly persistent in maintaining the *Hypothesis anguli recti*, and an angle sum strictly equal to two right angles.

Lobatschewsky in his theorem 19 proved that the sum of the three angles of a rectilineal triangle can not be greater than two right angles.

It is further believed that in his theorem 23 he could have demonstrated that the angle sum can not be less than two right angles, if he had not overlooked the important fact that the sum of two of the angles in each of the triangles constructed and admitted into the series is equal to one right angle + the acute angle, a , common to all the triangles.

JOHN N. LYLE.



EDITORIALS.

“THE MONTHLY is a tonic, and an excellent one.”—[E. L. Sherwood, A. M., Mississippi Normal College, Houston, Miss.]

PROF. C. A. WALDO, formerly of Greencastle, Ind., is now at the head of the Mathematical Department in Purdue University, Lafayette, Ind.

PROF. P. H. PHILBRICK is now located at Pineville, La., where he is very busily engaged in work for the Kansas City, Watkins & Gulf R. R.

PROF. O. W. ANTHONY, M. Sc., late of the Missouri Military Academy, Mexico, Mo., is now at New Windsor College, New Windsor, Md.

"I THINK the MONTHLY is doing a good work and hope it will be sustained."—[Geo. A. Osborne, S. B., Prof. of Mathematics in Mass. Inst. of Technology, and author of *Osborne's Diff. and Int. Calculus* (1891)].

"I FIND very many articles in it that are interesting and instructive, and I trust the MONTHLY may have a prosperous career."—[William J. Milne, Ph. D., LL. D., New York State Normal College, Albany, N. Y.]

PROF. E. S. LOOMIS, of Cleveland, Ohio, writes, "I find my new field of labor very agreeable, and I am now free to *think* as truth leads me out. I am so constituted that I *can not* 'build to fit an idea, but to *find* one.'"

THE American Mathematical Society held its Second Summer Meeting at Springfield, Mass., Aug. 27th and 28th, at which time and place were held also meetings of the American Association for the Advancement of Science and several other scientific societies of a national character.

WE have been obliged to issue another double number, from causes which we could not control. We hope our readers will bear with us patiently until we have completed our arrangements for the publication of the MONTHLY for next year. After that time we hope to have the MONTHLY appear regularly each month.

OUR contributors should please observe the following in reference to their contributions: (1) Write out their solutions of problems on substantial paper having a width of from 8 to 10 inches; (2) observe punctuation and capitalization; (3) write each solution on a separate slip of paper; and (4) sign your name to each solution or contribution.

"I PRIZE the MONTHLY very highly indeed. Taken all in all it is the best mathematical journal that has appeared in our country. I only wish I could find time to work out some of its excellent problems, and add a word now and then to its interesting discussions."—[Edward Brooks, A. M., Ph. D., Superintendant's Office, 713 Filbert St., Philadelphia, Pa.]

UNDER "*Queries & Information*," we have published two brief articles from the pen of Dr. John N. Lyle. These two articles speak for themselves. Dr. Lyle may be regarded as the greatest Anti-Non-Euclidean Geometer in America, and he has furnished many papers for publication in the MONTHLY. These we shall publish as our space permits. *Truth* has nothing to fear at the hands of any one, and if the Non-Euclidean doctrine is true, Dr. Lyle's papers will only aid in establishing it. Every great advance in science, every great discovery in nature, and every great invention has had its crowd of ridiculers; and Non-Euclidean Geometry is no exception. The Editors of the MONTHLY belong to the Non-Euclidean school of thought, even though the knowledge of that school respecting geometrical facts is an "exalted condition of learned ignorance." A school of thought represented by such men as Cayley, Sylvester, Klein, Gauss, Lambert, Lobachevsky, Halsted, Moore, and a great many others, can not be very far wrong "respecting geometric truth."